Readings

Risky Business

Breaking the Vicious Circle: Toward Effective Risk Regulation
by Stephen Breyer
(Harvard University Press, 1993), 127 pp.

Reviewed by Roger Noll

Federal regulation of hazardous substances is widely regarded as one of the most irrational and inefficient domains of public policy. For more than a decade, a virtual mountain of scholarly research undertaken across a wide spectrum of disciplines has found that the government wastes untold billions abating risks that have a minimal threat to human health, and even undertakes risk-abatement policies that actually cause more health problems than they cure. Stephen Breyer's new book, based on his 1992 Oliver Wendell Holmes Lectures at the Harvard Law School, takes on the burden of addressing why policy in this area has been so foolish, and what might be done to improve it.

Breyer's book is divided into four parts of roughly equal length. The fourth, and longest, is the footnotes—Breyer is, after all, a lawyer! The three chapters are devoted to characterizing the problems of risk regulation, explaining the cause, and proposing a solution.

The first chapter summarizes what is known about the performance of risk regulation during the past two decades. Breyer wrote this section from his perspective as a judge, trying to digest and synthesize a vast literature from scientists, engineers, and economists. He organizes his survey around three general problems in the performance of risk regulation, which he labels *tunnel vision*, *random agency selection*, and *inconsistency*. Tunnel vision refers to the tendency of regulators in each case to pursue reduction of the specific risk they are concerned with to the maximum feasible extent, without asking how one case might relate to another, or how a more stringent rule in one area might increase risks elsewhere. Random agency selection is self explanatory; it is in contrast to a conscious attempt to prioritize what is regulated according to the severity of the problem and the leverage government might have in solving it. Inconsistency is also the obvious consequence of the first two; differences in the stringency of regulation across sources of risk bear no relationship to any cognizable method of enumerating benefits and costs. Breyer does a good job of showing that the problem is most assuredly not just that the government ignores economics, but that no competing method for deciding what to regulate and how tough to make regulations could plausibly lead to the policies that are in place.

Chapter 2 is also synthetic, summarizing a great deal of literature in law and social science that deals with citizens' attitudes about risk and the way in which the government responds to citizen preferences. The main idea of this chapter is that bad policy outcomes are the result of a "vicious circle" of preferences and incentives in the political process. The vicious circle begins with citizen attitudes. Breyer summarizes the research on risk misperceptions and decision-making pathologies concerning low-probability, high-consequence risks. He concludes that this problem is very serious, and can be solved only in two ways: a thorough improvement in the educational system that enables people better to understand scientific and statistical arguments, or a willingness of citizens to delegate decision-making authority to experts. This conclusion is important, because it is the cornerstone of his subsequent policy conclusions.

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After discussing pathological attitudes about risk among citizens, Breyer then moves to the next part of the vicious circle: decisionmaking in Congress. Congress reacts to episodic, narrow crises because that is what their constituents want. As a result, Congress writes a large number of narrow statutory provisions, each designed to deal with a particular problem. The problem here is that Congress is not well-suited to write detailed regulatory laws. Most laws are written before much is known about the magnitude of the problem or the cost of solving it. Moreover, congressional authority is fragmented so that no single subcommittee develops sufficient expertise in a wide variety of risk-regulation issues to make sensible trade-offs and priorities in risk regulation.

The third part of the vicious circle is the uncertainties in implementing regulations in the administrative process. Breyer argues here that because regulators must run a "gauntlet of critical reviewers" (including judges), they must think more in terms of making a good legal case than making good policy. Moreover, formal procedural requirements make the process very long and rules difficult to amend. Those factors create an incentive for regulators to act conservatively—to respond to scientific uncertainty, inflexibility, and the prospect of legal challenge by writing regulations that have a much lower chance of being too soft than of being too stringent.

Breyer closes the vicious circle by arguing that the public, in observing the slow and inconsistent results of regulation, is thereby reinforced in its belief that experts cannot be trusted. Hence, public attitudes about risk are made even less likely to be informed by scientific information provided by experts.

Chapter 3 presents Breyer's solution, which is to try to solve the problem of lack of faith in experts and fragmentation of policymaking by creating a small superagency for risk regulation. Basically, the idea is to expand the regulatory review activities that have been located somewhere in the Executive Office of the President for the past two decades. The organization would be the highest ladder on the career path of civil servants involved in this form of regulation. In addition to developing and applying a consistent method of risk assessment across all agencies and program, the new agency would also recommend budgetary reallocations among regulatory agencies, and even between risk regulation and other health-related activities.

The last chapter is the least convincing of the three, for it does not deal in much depth with two core problems: how a small group of superbureaucrats could be expected to make a large dent in the enormous regulatory apparatus of the federal government, and whether any of the participants in the present system would be attracted to rationalizing risk regulation. Perhaps Breyer is correct that the two other main avenues for change—better education about risks and decision theory, and reform of the political process to make it less prone to sensationalism and special-interest politics—seem remote possibilities, so that one should concentrate on administrative reform, at least for some immediate improvements. But likewise the debate remains unresolved over whether the latter can really accomplish much.

Aside from the softness of the specific reform proposal, *Breaking the Vicious Circle* is a nice piece of work. Nonspecialists in risk analysis and risk policy, regardless of their political persuasion, can find no better brief summary of the important issues associated with this area of public policy, and how to approach them more sensibly than the government has thus far been able to do.

The Regulatory Era Comes to an End

Federal Telecommunications Law
by Michael K. Kellogg, John Thorne, and Peter W. Huber
(Little, Brown and Company, 1992), 914 pp.

The Geodesic Network II:
1993 Report on Competition in the Telephone Industry
by Peter W. Huber, Michael K. Kellogg, and John Thorne
(The Geodesic Company, 1992), 501 pp.

Reviewed by Jonathan W. Emord

Bit streams are washing away the technological and regulatory distinctions that have separated computer, telephone, television, radio, and data

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communications. The ones and zeros of digital systems are making everything that is electronically communicable fungible and interchangeable. They are likewise blurring the distinctions between markets that were once considered necessarily separate, causing local telephone companies to compete with broadcast television, cable, cellular, two-way radio, and paging services.

As the digitization process continues, once stationary technologies, such as wire-linked telephones and facsimile machines, desk-bound personal computers, and floor-based television sets, will increasingly give way to a new generation of portable multimedia units. These will include pocket phones with LCD data screens and eventually video phone capabilities, as well as portable telecomputers (to borrow a term coined by George Gilder) that transmit and receive voice, video, and data communications and provide facsimile printouts. These inevitable changes pose grave threats to current telecommunications law. Designed to lock telecommunications firms in discrete markets, to control their rates, and to define their services, the old laws become nonsensical when markets are no longer discrete and rates fall due to competitive entry and the advent of better and cheaper information processing and delivery mechanisms. The new multimedia create dilemmas for regulators who cannot reconcile old laws based on anachronistic assumptions with new technologies that make competition the rule.

In *Federal Telecommunications Law*, Kellogg, Thorne, and Huber offer a comprehensive introduction to the world of telecommunications regulation on the brink of collapse. They predict the inevitable elimination of inter-service distinctions among computer, telephone, television, cable, and radio. Here the law student and the layman may find in comprehensible prose the best single introduction to modern telecommunications law and the technological changes that are tearing it apart.

The authors succinctly chronicle the history of the Bell system, explaining how Bell (with political support and patents that gave it the authority to deny long-distance interconnection to all but Bell-affiliated phone systems) replaced duopolistic competition in local telephone markets with monopoly by 1915.

With the passage of the Communications Act of 1934, telephone monopolies were granted federal protection. Condemning the early history of duopolistic competition in telephone, the monopoly phone companies and congressional advocates of the Communications Act defined telephone service as a natural monopoly, defended the denial of interconnection rights by arguing that they would be inefficient and costly, and agreed to a common carrier regulatory model that has governed telephony ever since.

Local and federal laws effectively bar potential competitors from entering a telephone franchisee's market in exchange for that franchisee's commitment to abide by comprehensive common carrier rate and service regulation. Of paramount importance to politicians has been the provision of universal service to residential customers at heavily subsidized rates. To accomplish that objective, regulators have required the payment of subsidies from long-distance to local service, artificially inflating the cost of long distance and deflating that of local service. The subsidies have produced numerous perverse effects documented by the authors. But, as the authors understand, even those politically prized subsidies are unlikely to survive the growth of competitive markets.

In the usual history, telecommunications scholars describe the 1982 Modification of Final Judgment (MFJ) as *the* reason for Bell's demise. Kellogg, Thorne, and Huber disagree; they understand that the death of the Bell system is more complicated than that. Certainly, the MFJ ended a Department of Justice antitrust case against AT&T in exchange for the breakup of the Bell system into eight separate local operating companies, leaving interstate toll service and some state toll service to the post-divestiture AT&T. But other forces were also at work. The authors point out that technological innovations at Bell Labs made that AT&T entity an unwitting contributor to the company's breakup. The authors explain how new technologies (including the transistor, microwave transmission systems, electronic switches, satellites, new customer premises equipment, computers, and developments in radio) along with changes in regulation (opening customer premises equipment and long-distance markets to competition and mandating interconnection at non-discriminatory rates and open network architecture) also helped bring about the end of Bell hegemony.

Coinciding with the Bell breakup came the

electronics revolution of the 1980s. Steady increases in computing power due to regular breakthroughs in microprocessor design (placing ever more tiny transistors on microprocessor chips) led to the decentralization of the local telephone company's central switch, as the authors document. Those developments have diverted a significant flow of traffic from the local exchange bottleneck to private branch exchanges (PBXs), CD-ROMs, competitive access providers (CAPs), and cellular phone companies. The ultimate bypass of the local loop is on the horizon: personal communications services (PCS). Once spectrum is allocated for this new service, pocket phones will become ubiquitous, enabling users to transmit over-the-air radio messages to nearby base stations connected to buildings and utility poles for retransmission to other phones. Although a considerable amount of communication will still pass through the telephone companies' central switch, an equally significant amount will bypass it, connecting with satellites, CAPs, cable systems, or other pocket phones directly.

With so many new entrants coming to local service markets, and with the collapse of service barriers proceeding apace, the authors foresee the end of the exclusive telephone franchise, the remaining MFJ line of business restrictions, and the common carrier regulatory model itself. The toppling of regulations predicted by the authors has already begun in a big way: in a recent landmark decision, U.S. District Judge T. S. Ellis III overturned on First Amendment grounds Section 533(b) of the Cable Communications Policy Act of 1984, which has blocked telephone companies from providing video programming within their service areas.

The authors explain that the central premise upon which the MFJ was based—that competition would be feasible in long-distance service but infeasible in local service—was wrong from the start. Today local markets are competitive and becoming more so, yet long-distance markets are hardly competitive at all.

Repeatedly the authors explain that Judge Harold Greene has miscalculated the direction of the market and has thereby kept in place restrictions that have prevented rather than promoted competition. They also note that through his decade-old jurisdiction over the AT&T consent decree, Judge Greene has acquired extensive control over Bell activities. The authors contend that his decisions on Bell waiver requests have been shaped not by his view of the telephone companies' role in a competitive market but by his commitment to ensure the provision of universal service at subsidized rates.

Under the MFJ, the eight Bells given life by the consent decree were required to abide by certain strictures, purportedly to prevent their exercise of monopoly power over otherwise competitive markets. Among the restrictions originally specified were those barring the Bells from providing long-distance and electronic information services, manufacturing or selling telephone equipment, or providing any other product or service that is not a "natural monopoly service regulated by tariff." The ban on Bell provision of long-distance service remains in place, but the other restrictions have been lifted to varying degrees, a concession to the overwhelming verities of market competition.

In 1991, in response to a D.C. Circuit remand, Judge Greene grudgingly lifted the information services restriction on the Bells, predicting that anticompetitive effects would flow from the Bell companies' entry into those markets. The predicted lessening of competition has not occurred (although Judge Greene has prohibited Bell provision of information services through long distance). For a time, Judge Greene prohibited the Bells from selling customer services equipment but has since permitted them to do so against the claims of parties that the Bells would dominate consumer premises equipment markets. They have not. In 1987, Judge Greene lifted the "other business" restriction. No evidence exists that the Bells have monopolized any markets outside the market for local telephone service.

The authors are keenly aware of the public choice paradigm and explain their view that substituting a government monopoly for a market one does not, in the end, serve consumers. They explain that regulators may be "captured" by the regulatees themselves and that long after regulation has outlived its basic purpose, the law perpetuates "unnatural monopolies" to the disadvantage of would-be market entrants and consumers.

The authors place the local telephone market in the "genie-out-of-the-bottle" stage. The benefits of competition are being appreciated by consumers and have whetted their appetites for a shift from POTS (plain old telephone service) to PANS (pretty amazing network services).

Politicians who try to reverse this trend are going against public desires. In recognition of the shifting political winds, the Federal Communications Commission has eschewed eight decades of structural separation regulations in favor of equal access and open network architecture policies. Instead of blocking market entry, the FCC has begun to facilitate it by mandating open access to monopoly networks. The authors applaud that shift in policy.

The authors recognize a major source of competition will come from cable systems. A considerable number of cable multiple system operators have sought authority from the FCC to test PCS which will place them in telephone markets at a time when telephone companies are entering cable markets. Moreover, it is technologically possible for cable systems to be reconfigured to engage in telephony through their existing cable lines. Hence, cable could soon become a direct competitor of the Bells' land line services.

The study of such competition and of competition in long-distance markets is the subject of the authors' second book, *The Geodesic Network II* (sequel to Peter Huber's report for the Department of Justice's triennial review entitled *The Geodesic Network*). *Geodesic Network II* is the most detailed analysis of competition in U.S. telecommunications markets that exists. It is crammed with useful statistical data and insights, and is a veritable cornucopia for researchers.

For years those involved in the telecommunications policy debate pointed to the high costs of running fiber to the home as a principal obstacle to achieving multimedia. However, as the authors explain, that problem is being solved not only by developments in digital switching and fiber splicing but also by developments in compression chips that permit full-color video to be sent over ordinary copper telephone lines and by use of digital compression over radio that permits signals to traverse the last mile to the home in the air.

The authors identify a host of diverse sources of multimedia competition in the local loop, including CAPs that are cutting into the Bells' interconnection markets, and cellular telephone companies that are also making inroads. Bursting on the scene are consortia of CAPs and cable television companies with PCS. Those consortia can link together and form regional and national networks, thereby providing competition to local and long-distance telephone compa-

nies.

In stark contrast to their view of competition in local services, the authors foresee no end to the highly concentrated long-distance market. They believe that long-distance service is a natural monopoly. High volume traffic trunked over costly fiber-optic cable causes long distance to fit within one of the classic textbook definitions of natural monopoly. The authors contend that regulations that require non-cost-based umbrella pricing are the only reason why MCI and GTE-Sprint can compete against AT&T in long distance. Were those regulations removed, the authors believe that AT&T "would quickly annihilate its competitors." It would be able to turn its enormous economies of scope and scale into dramatic cost reductions that MCI and GTE-Sprint, among others, simply could not match. Yet, as long as AT&T is regulated, the authors believe that it will be prevented from capturing the full economies of fiber optics and passing them on to consumers.

The authors recommend no specific regulatory or deregulatory policy for long-distance service. Their rhetoric strongly suggests that AT&T should not be liberated from rate and service regulation anytime soon, while the Bells should be set free right away.

In local service markets, they expect customer premises wiring will span entire metropolitan areas, private switches will handle the great bulk of PBX-users' traffic, cellular and PCS will substitute more and more for the local exchange, and CAPs will link more metropolitan locations to their lines, further facilitating bypass. Moreover, CAP-cable partners will extend their reach into residential areas previously served only through the Bells' bottleneck.

For long-distance markets, however, the authors present a parade of horribles if AT&T "were ever freed from regulation and the specter of antitrust litigation." According to the authors: "[U]nder the equal charge rule AT&T pays the same unit charge for local connections—which means it pays more for its connections than the connections cost local telcos to supply. MCI and Sprint pay less. In an honestly competitive world, access prices would be set in line with costs. AT&T's access costs would fall about 6 percent, and MCI's and Sprint's would rise about 10 percent. A 16 percent swing in access costs would obliterate the competition. The carriers have said so themselves, in papers filed with the FCC."

The best the authors believe attainable given the natural monopoly status of long-distance service is duopolistic competition, artificially perpetuated through the equal charge rule.

While it seems likely that the market power AT&T enjoys as a result of a century of government protection makes it capable of destroying GTE-Sprint and MCI, the authors merely assert that result and do not explain what deregulatory steps might be taken to permit true competition to emerge in the long-distance market. Once PCS become ubiquitous, the PCS-cable consortia will do what some cellular companies have done: link their systems into regional, national, and international networks. Research on digital compression technology and advances in computing power hold out the promise that mobile communications will, in a matter of years, include interactive audio, video, and data (what has been termed "multimedia"). Fiber to the home is being brought about by cable multiple systems operators and by local telephone companies in preparation for multimedia. In those advances lie the groundwork necessary for inexpensive, efficient long-distance communication systems that can compete with AT&T.

The timing of deregulation will play a critical role in determining whether sustainable competition develops in long-distance markets. If the MFJ restriction on the Bells' provision of long-distance service were eliminated, if the antitrust laws were relaxed, and if foreign ownership in local telephone companies were liberally permitted, national and international consortia could develop that would permit several Bells to unite among themselves or with foreign telephone companies for the provision of regional, national, and international telephone services in competition with AT&T. Likewise, it is only a matter of time until PCS-cable consortia form mobile pocket phone long-distance networks that will permit many people to bypass the Bells and, eventually, AT&T through satellite interconnections.

Immediately removing the long-distance restriction on the Bells, relaxing the antitrust laws, allowing foreign ownership of local phone companies, and allowing the Bells to engage in long-distance cellular and PCS communication services would provide a strong incentive for the Bells to form strategic alliances for the formation of separate, fully competitive long-distance

networks. In addition, by rapidly making more government spectrum available for PCS use by CAP-cable consortia and by permitting the resale of UHF spectrum for PCS use, the government could help foster the development of regional, national, and international mobile phone networks in competition with the Bells and AT&T. In time, moves such as these could lessen concentration in long-distance markets. AT&T could then be freed from the MFJ restrictions and permitted to enter local telephone markets.

Rather than merely state the existence of natural monopoly in long-distance service and suggest its inevitability, the authors could have done more. They could have explained that AT&T has attained monopoly status through almost a century of protectionist law and that long-distance markets can be rendered competitive if deregulation is pursued in a manner that will encourage market entry by obvious sources of competition (the Bells, the CAP-cable consortia, and foreign telephone companies). The very same technological forces that favor the convergence of audio, video, and data communication and the decentralization of the local exchange (from the central switch to the PBX to the user), and that have made local competition possible, also make long-distance competition inevitable. Moreover, the artificial distinction between local and long-distance service, a product of the Communications Act's federal-state division of regulatory authority over telecommunications, is destined to collapse in response to the force of competitive entry. The globalization of communication now taking place makes artificial distinctions untenable, whether based on the nature of the medium or geography.

Considered *in toto*, these books are outstanding contributions to the field. Anyone serious about understanding the nature of telecommunications law and the competitiveness of telecommunications markets cannot do without reading them. They are the best sources of information about telecommunications law and markets now available and will likely remain so for some time to come.